

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
1 September 2005 (01.09.2005)

PCT

(10) International Publication Number
WO 2005/081032 A1

(51) International Patent Classification⁷: **G02B 23/24**

(21) International Application Number:
PCT/EP2004/001337

(22) International Filing Date: 13 February 2004 (13.02.2004)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): **OLYMPUS WINTER & IBE GMBH** [DE/DE]; Kuehnstrasse 61, 22045 Hamburg (DE).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **MORI, Takao** [JP/JP]; 3-5-12-205 Hon-cho, Koganei-shi, Tokyo, 184-0004 (JP).

(74) Agent: **SCHAEFER, Konrad**; Schaefer Emmel Hausfeld, Gehölzweg 20, 22043 Hamburg (DE).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

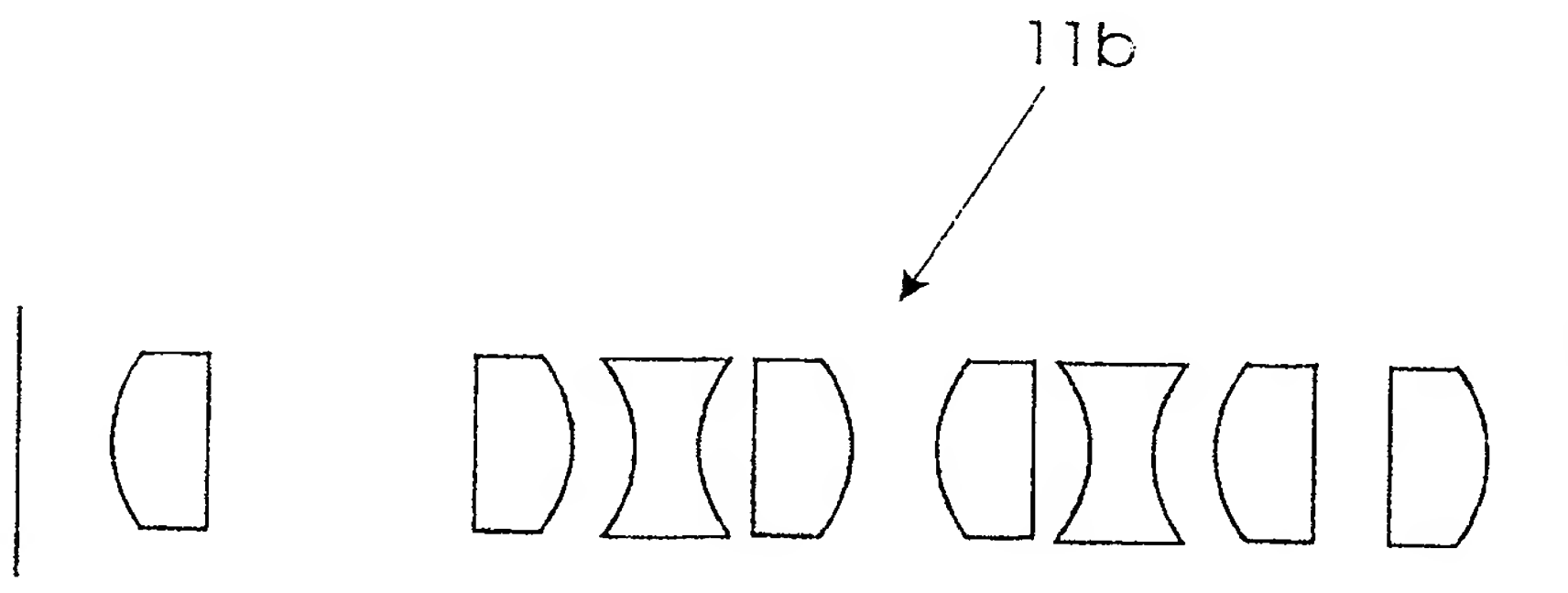
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: RELAY SET FOR A RIGID ENDOSCOPE



(57) Abstract: A relay set (1, 11, 23) for the optical system of a rigid endoscope, said optical system comprising an objective (20) at the distal end, an ocular (22) at the proximal end and between them a relay lens system consisting of several relay sets (1, 11, 21, 23), said relay set (1, 11, 23) consisting of two half sets (2a, 2b) having the same lens units (3a1, 3a2, 3a3, 3a4; 3b1, 3b2, 3b3, 3b4) arranged in symmetrical sequence with respect to the centre (5) of the set, is characterised in that each half set (2a, 2b) consists of four lens units (3a1, 3a2, 3a3, 3a4; 3b1, 3b2, 3b3, 3b4) having in the sequence of raising distance from the centre (5) the refracting powers Positive, Negative, Positive, Positive (P, N, P, P).

WO 2005/081032 A1